

# You're looking for customized and scalable solutions ...



Control      Network  
Growth

**elrest®**

# ... then you have reached the right place!

Technology overview	visio				visio control									
	T090	T290	T715	T719	P090	P101	P205	P303	P305	P406	P408	P410	P412	
Display	LCD	STN	TFT		LCD		STN / TFT	STN		TFT				
Size (inches)	3,5"	5,7"	15"	19"	3,5"	3,1"	5,7"			6,5"	8,4"	10,4"	12,1"	
Resolution (Width x Height in Pixels)	128 x 64	320 x 240	1024 x 768	1280 x 1024	128 x 64	122 x 32	320 x 240/ 640 x 480	320 x 240		640 x 480			800 x 600	
Operating devices	Front panel keypad	Touch screen			Front panel keypad		Touch screen							
Keys	15	18	–		15	9	–	18				–		
External keyboard / Mouse / Barcode reader	–/–/–				–/–/–				* / * / 2		–/–/–		* / * / 2	
Buffer	–				Persistent data in Flash, realtime clock and Retain Data battery buffered.									
Memory	–				2 MB RAM, 4 MB Flash, 2 KB EEPROM	1 MB RAM, 1 MB Flash, 2 KB EEPROM	64 MB DRAM, 128 MB Flash, 1 MB SRAM battery buffered	2 MB RAM, 4 MB Flash, 2 KB EEPROM	4 (2) MB RAM, 4 MB Flash, 2 KB EEPROM	64 MB RAM, 32 MB Flash, 1 MB SRAM battery buffered				
Memory Expansion	–				–		SD-Card	–						
Operating system	µE			–	µE		Microsoft Windows embedded CE 6.0	µE		Microsoft Windows CE 5.0				
PLC programming	–				IEC61131-3 / CoDeSys									
HMI programming	–				ElaDesign									
C/C++/C# programming	–				–		2	–	2	2	–			
Analog In- / Outputs	–/–				–/–				*/*	–/–				
Digital In- / Outputs	–/–				–/–				*/*	–/–				
Protection class	Front IP65, Back IP20		Front IP65, Back IP54		Front IP65, Back IP20									
Operating temperature	0° to 50° C		0° to 45° C		0° to 50° C									
Voltage	24 VDC (18...30VDC)													
Power consumption	5 - 8 W		35 - 40 W		5 - 8 W		8 - 12 W	5 - 8 W	8 - 12 W	10 - 18 W				
Dimensions (Width x Height x Depth in mm)	200 x 60 x 30	208 x 150 x 50	450 x 320 x 32	500 x 370 x 32	200 x 60 x 30	131 x 81 x 35	208 x 150 x 50		208 x 150 x 41	244 x 188 x 43	284 x 222 x 46	330 x 268 x 45		
Mounting Cut-out (Width x Height in mm)	188 x 54	198 x 140	–		188 x 56	125 x 75	198 x 140		198 x 140	227 x 172	268 x 206	310 x 248		
<b>Interfaces</b>														
Ethernet	–				*	–	*							
CAN	*		–		*									
USB Host / USB Slave	–/–		*/–		–/–		*/*	–/–		*/–				
RS232 / RS485 / RS422	–/–/–				*/**		*/*/–	*/**						

More interface on customer request

**Note**  
© 2008 elrest GmbH. All rights reserved. The information contained in this document can be changed without notice and does not represent a commitment by elrest GmbH. Illustrations and descriptions and dimensions and technical data correspond to the circumstances or intentions at the time of printing. Changes of any kind, especially those arising from technological progress, economic performance or similar results, brochure remain reserved. The external interconnection of the devices is made by self-reliance.

Legend \* = available - = not available ? = on request

## visio:

The visio-terminals are mostly suited for simple operations and observations. The terminals receive the information to the display from a combo control Master and activate tasks in the controller through dedicated keys or a touchscreen. The project is stored in the combo control Master. You can attach up to four terminals simultaneously to one master. The HMI-screens are created in the development tool eStudio and can access all HMI-functions.

## visio control:

This operating solution is more than a HMI or operator interface. It consists of an industrial controller, PLC according to the IEC-Standard 61131-3, and a HMI that manages control and monitoring functions. The product family is capable of handling the most complex and demanding automation applications. Additional interfaces and functions such as web-browser, audio etc. are available as the system is based on powerful, standard, processors and operating systems (Windows® CE\*).

The PLC has a high performance and is very powerful solving tasks in the most demanding and fast processes. The individual HMI-solutions are created in the programming tool eStudio.

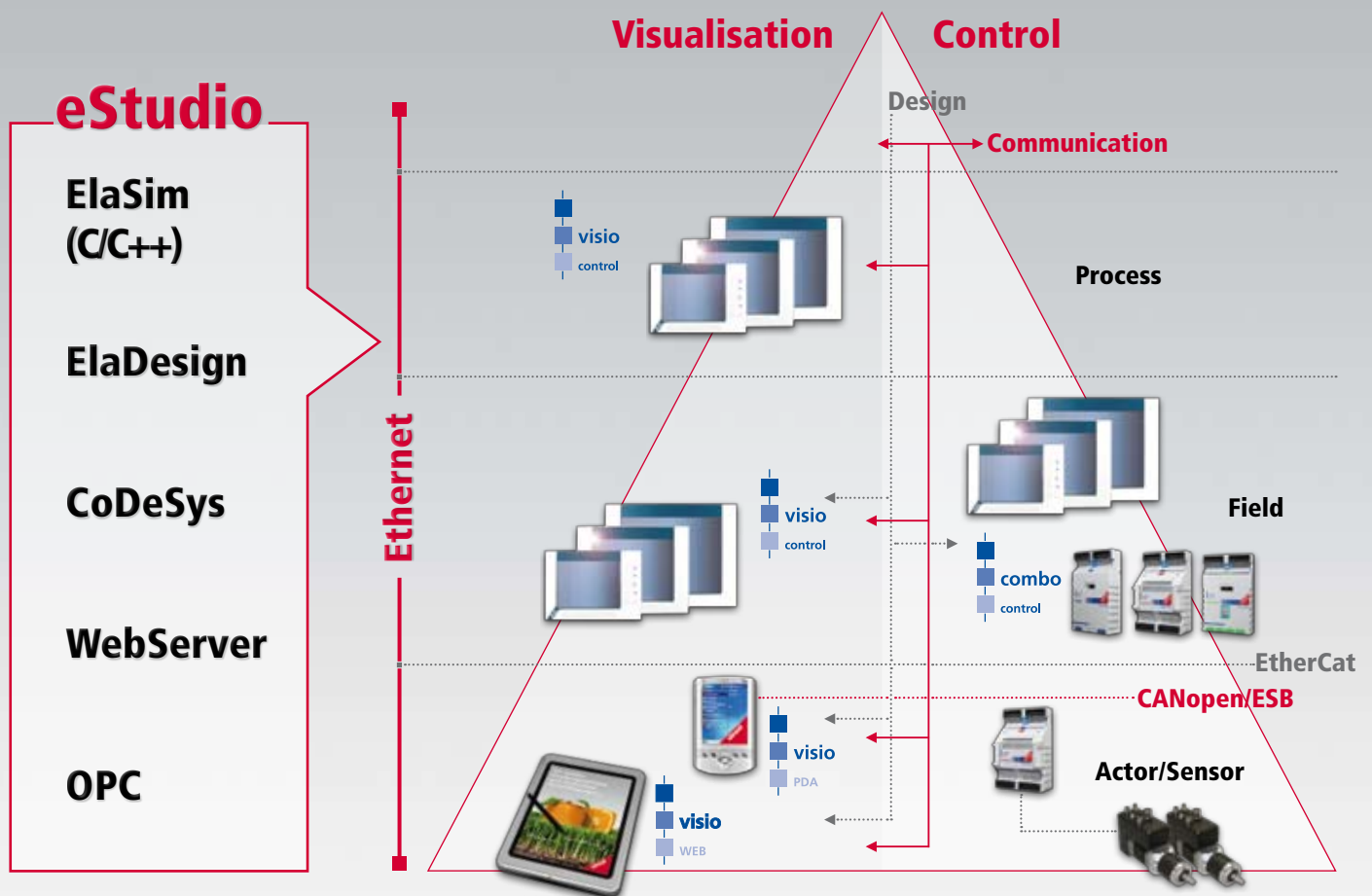
## combo control:

The flexible and extensible PLC system with maximum performance in the smallest form factor. The price/performance ratio as well as the compact size of the system shows its benefits in large control applications with high demands on compactness. The product family manages cycle times of less than one millisecond (< 1 ms). The PLC-system consists of master-, slave- and extension-modules. The most compact solution is only using the master-module with on-board I/O. Up to 63 slave-modules can be connected to the master. Each and every master- and slave-module can optionally be extended with an extension-module. This way the functionality as well as the number of I/O can be adapted to the specific needs of the application.

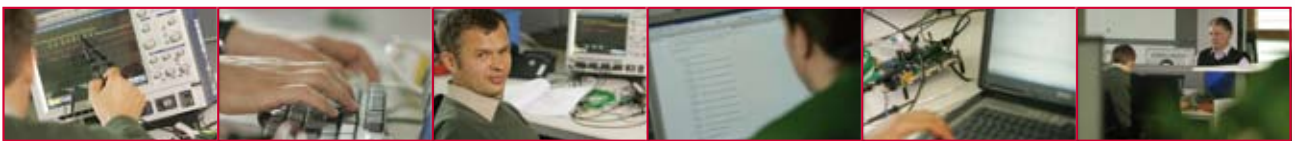
# elrest products and solutions!

Technical overview	combo control													
	combo control Master					combo control Slave				combo control Extension				
	CM100	CM101	CM110	CM111	CM700	CS100	CS101	CS110	CS111	CE100	CE101	CE150	CE152	
Memory	2 MB RAM, 4 MB Flash, 2 KB EEprom				512 MB to 2 GB DDR2 533 RAM, 2 GB Flash	-								
External Memory	combo extension-Module CF-Card					-								
Buffer	persistent data in Flash, realtime clock and retain data batterybuffered					-								
Operating system	µE				Windows XP embedded	-								
PLC programming	IEC61131-3 / CoDeSys					-								
Ethernet TCP/IP-Stack	HTTP Web Server, SMTP Email, FTP File transfer, TCP-Modbus					-								
Diagnosis	LEDs indicating operation and status, LED Power, LED Status I/O				LEDs indicating operation and status, LED Power, LED Harddrive access, LED CF access, LED S-ATA access	LEDs indicating operation and status, LED Power, LED Status I/O				-				
DIN/OUT optional	-	32	16	-	-	32	16	-	-	-	-	-	-	
DIN	16	-	-	-	16	-	-	16	-	-	-	-	-	
DOUT	16	-	-	-	16	-	-	16	-	-	-	-	-	
AIN 0...10 V / 0...20 mA, Pt100	-	-	4	-	-	-	-	4	-	-	-	-	-	
AIN 0...10 V / 0...20 mA	-	-	-	-	-	-	-	-	-	-	-	-	2	
AOUT 0...10 V	-	-	4	-	-	-	-	4	-	-	-	-	2	
AOUT -10 V...+10 V	-	-	-	4	-	-	-	-	4	-	-	-	-	
DMS	-	-	-	-	-	-	-	-	-	-	-	1	2	
CF-Card	-	-	-	-	1	-	-	-	-	-	-	1	-	
<b>Digital inputs</b>														
Input voltage	24 VDC				-	24 VDC				-	-			
Frequency max.	1000 Hz; counter input: 10 kHz				-	1000 Hz				-	-			
Overtoltage	43 V				-	43 V				-	-			
<b>Digital outputs</b>														
Output voltage	24 VDC / 0,5 A (positive logic)				-	24 VDC / 0,5 A (positive logic)				-	-			
Current (acc. to DIN)	max. 5 A (at 50% ED)				-	max. 5 A (at 50% ED)				-	-			
Max resistive load	10 W				-	10 W				-	-			
Switching frequency Ohm / Inductive	100 Hz / 0,5 Hz / Stepper motor control max. 10 kHz				-	100 Hz / 0,5 Hz				-	-			
Shortcircuit / Therm. protection	Current limit typ. 0,7 A per channel / 150° C, melting fuse 5 A for max current				-	Current limit typ. 0,7 A per channel / 150° C, Melting fuse 5 A for max current				-	-			
Pole protection	*				-	*				-	-			
Max wiring length	600 m (unshielded), 1000 m (shielded)				-	600 m (unshielded), 1000 m (shielded)				-	-			
<b>Analog inputs</b>														
A/D-converter	-	-	12 Bit	-	-	-	12 Bit	-	-	-	-	12 Bit	-	
Wiring	-	-	2-wire	-	-	-	2-wire	-	-	-	-	2-wire	-	
Conversion time per channel	-	-	10 ms	-	-	-	10 ms	-	-	-	-	100 ms	-	
<b>Analog inputs DMS</b>														
A/D-converter	-	-	-	-	-	-	-	-	-	-	-	-	24 Bit	
Signalgeber	-	-	-	-	-	-	-	-	-	-	-	-	6-wire	
Conversion time per channel	-	-	-	-	-	-	-	-	-	-	-	-	100 ms	
<b>Analog outputs</b>														
D/A-converter	-	-	12 Bit	-	-	-	12 Bit	-	-	-	-	12 Bit	-	
Voltage	-	-	0...10 V	-	-	-	0...10 V	-	-	-	-	0...10 V	-	
Current	-	-	-	-	-	-	-	-	-	-	-	0...20 mA	-	
<b>General</b>														
Protection class housing	IP20													
Mounting	Snap-in mounting on DIN-rail DIN50022				Installation in cabinet, 2 point quick mounting	Snap-in mounting on DIN-rail DIN50022				Snap-in mounting on combo control Master				
External dimension (WxHxD in mm)	80 x 130 x 28,5				69 x 200 x 165	80 x 130 x 28,5				80 x 95 x 24				
Operating temperature	0° to 50° C													
<b>Measuring areas</b>														
Electrical: Voltage	-	-	0...10 V	-	-	-	0...10 V	-	-	-	-	0...10 V	-	
Electrical: Current	-	-	0...20 mA	-	-	-	0...20 mA	-	-	-	-	0...20 mA	-	
Temperature: Pt100	-	-	-30°...500° C	-	-	-	-30°...500° C	-	-	-	-	-	-	

# System overview



## We manage your success. elrest – your system vendor



Since 30 years elrest has been a competent partner for automation solutions. Our perfection in automation technology consists of the combination of control, regulation, visualisation and communication within a single software tool. With our innovative solutions, we strengthen the effectiveness of each production process, scalable from the space-saving machinery up to control large systems with distributed intelligence.

elrest components and system solutions are used worldwide in numerous industries and leading companies. Due to futureproof compatible systems with high investment protection and latest technologies elrest customers secure their own competitive advantage.

elrest Automationssysteme GmbH | Leibnizstrasse 10 | D-73230 Kirchheim / Teck  
 Phone: +49 (0) 7021 92025-0 | Fax: +49 (0) 7021 92025-29 | email: [vertrieb@elrest.de](mailto:vertrieb@elrest.de) | web: [www.elrest.de](http://www.elrest.de)

**elrest**

Control

Network

Growth